**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A lane keep control apparatus for an automotive vehicle, comprising:

a deceleration controlled variable calculating section that calculates a deceleration controlled variable on the basis of a state of a tendency of a vehicular deviation from a traffic lane on which the vehicle is traveling; and

a braking force controlling section that controls a braking force acted upon each of **the** driven wheels of the vehicle on the basis of the calculated deceleration controlled variable.

2. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 1, wherein the lane keep control apparatus further comprises: a vehicular traveling information detecting section that detects at least one of a vehicular traveling state and a vehicular traveling environment; and a deviation tendency detecting section that detects the state of the **tendency of the** vehicular deviation from the traffic lane on which the vehicle is traveling, ~~and~~ wherein the deceleration controlled variable calculating section calculates the deceleration controlled variable on the basis of the state of the **tendency of the** vehicular deviation from the traffic lane of the vehicle on which the vehicle is traveling.

3. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 2, wherein the **vehicular** traveling information detecting section detects at least one of an acute angle ($\phi$) formed between the traffic lane on which the vehicle is traveling and a forward-and-backward axis of the vehicle and a curvature of the traffic lane on which the vehicle is traveling and wherein the deviation tendency detecting section detects the state of the tendency of the vehicular deviation from the traffic lane on the basis of at least one of the acute angle formed between the traffic lane on which the vehicle is traveling and the forward-and-rearward axis of the vehicle and the curvature of the traffic lane on which the vehicle is traveling.

4. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 2, wherein the lane keep control apparatus further comprises a turning state detecting section that detects a turning state of the vehicle and wherein the deviation tendency detecting section detects the state of the tendency of the vehicular deviation from the traffic lane on which the vehicle is traveling on the basis of at least one of the vehicular traveling state and the traveling environment detected by the **vehicular** traveling information detecting section and on the basis of the vehicular turning state detected by the turning state detecting section.

5. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 4, wherein the **vehicular** traveling information detecting section detects **a** ~~the~~ curvature of the traffic lane on which the vehicle is traveling, the turning state detecting section detects a vehicular turning curvature on the basis of at least one of a traveling speed of the vehicle, a steering angle thereof, and a yaw rate thereof, and the deviation tendency detecting section detects the state of the tendency of the vehicular deviation from the traffic lane on the basis of the curvature of the traffic lane detected by the **vehicular** traveling information detecting section and the vehicular turning curvature detected by the turning state detecting section.

6. (Currently Amended A lane keep control apparatus for an automotive vehicle as claimed in claim 5, wherein the deviation tendency detecting section calculates a future deviation quantity estimated value from the traffic lane on which the vehicle is traveling on the basis of the curvature of the traffic lane detected by the **vehicular** traveling information detecting section and the vehicular turning curvature detected by the vehicular turning state detecting section.

7. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 3, wherein the **vehicular** traveling information detecting section detects both of the acute angle ($\phi$) formed between the traffic lane on which the vehicle is traveling and the forward-and-backward axis of the vehicle and the curvature (ß) of the traffic lane and the deviation tendency detecting section detects the state of the tendency of the vehicular

deviation from the traffic lane on the basis of both of the acute angle ($\phi$) formed therebetween and the curvature (ß) of the traffic lane on which the vehicle is traveling.

8. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 7, wherein the deviation tendency detecting section comprises: a future estimated lateral displacement ~~(XS)~~ calculating section that calculates a future estimated lateral displacement (XS) of the vehicle with respect to the traffic lane on the basis of a traveling speed (V) of the vehicle, the acute angle ($\phi$) formed between the traffic lane and the forward-and-backward axis of the vehicle, and the curvature (ß) of the traffic lane; and a first determining section that determines whether a magnitude of the future estimated lateral displacement (XS) of the vehicle is equal to or larger than a deviation determination threshold value (Xc), ~~and~~ wherein the deviation tendency detecting section detects the state of the vehicular deviation from the traffic lane when the first determining section determines that the magnitude of the future estimated lateral displacement (XS) is equal to or larger than the deviation determination threshold value (Xc).

9. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 8, wherein the deviation determination threshold value (Xc) is a lateral displacement limit value which is set to provide a relatively large constant value in a first region in which an absolute value $|\phi|$ of the acute angle formed between the traffic lane and the forward-and-backward axis of the vehicle is smaller than a predetermined small value, is set to provide a relatively small constant value in a second region in which ~~an~~ **the** absolute value $|\phi|$ of the acute angle formed therebetween is equal to or larger than a predetermined large value, and is set to be linearly decreased along with an increase in **the** absolute value $|\phi|$ of the acute angle formed therebetween in an intermediate region between the first and second regions.

10. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 8, wherein the deviation determination threshold value (Xc) is a lateral displacement limit value, which is set to provide a relatively large constant value in a first region in which an absolute value $|\beta|$ of the curvature of the traffic lane on which the vehicle

is traveling is smaller than a predetermined small value, is set to provide a relatively small constant value in a second region in which the absolute value $|\beta|$ of the curvature of the traffic lane is equal to or larger than a predetermined large value, and is linearly decreased along with an increase of the absolute value ~~$|\beta|$~~ $|\phi|$ of the acute angle formed therebetween in an intermediate region between the first and second regions.

11. (Original) A lane keep control apparatus for an automotive vehicle as claimed in claim 8, wherein the deviation tendency detecting section further comprises a second determining section that determines whether the magnitude of the future estimated lateral displacement (XS) of the vehicle is smaller than zero and is smaller than an inverted value (-Xc) of a sign of the deviation determination threshold value (Xc) and wherein the deviation tendency detecting section detects the state of the tendency of the vehicular deviation from the traffic lane when the second determining section determines that the magnitude of the future estimated lateral displacement (XS) is smaller than zero and is smaller than the inverted value (-Xc) of the sign of the deviation determination threshold value (Xc).

12. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 11, wherein the deceleration controlled variable calculating section calculates the deceleration controlled variable ~~(Pg)~~ on the basis of a first proportional coefficient (Kv1) determined from vehicular specifications, a second proportional coefficient (Ks) determined from the traveling velocity (V) of the vehicle, a third proportional coefficient (Ky) determined from the acute angle formed between the traffic lane and the forward-and-backward axis of the vehicle, an absolute value ($|XS|$) of the future estimated lateral displacement, and the deviation determination threshold value (Xc).

13. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 12, wherein the ~~second~~ **third** proportional coefficient (Ky) is set to provide a relatively large constant value in a first region in which an absolute value ($|\phi|$) of the acute angle formed between the traffic lane and the forward-and-backward axis of the vehicle is equal to or larger than a predetermined large value, is set to be smaller than a predetermined

small value in a second region in which the absolute value ($|\phi|$) of the acute angle formed between the traffic lane and the forward-and-backward axis of the vehicle is smaller than a predetermined small value, and is set to be linearly increased along with an increase of the absolute value ($|\phi|$) of the acute angle formed between the traffic lane and the forward-and-backward axis of the vehicle in an intermediate region between the first and second regions.

14. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 12, wherein the ~~second~~ **third** proportional coefficient (Ky) is set to provide a relatively large constant value in a first region in which an absolute value ($|\beta|$) of the curvature of the traffic lane on which the vehicle is traveling is equal to or larger than a predetermined large value, is set to be smaller than a predetermined small value in a second region in which the absolute value ($|\beta|$) of the curvature (ß) of the traffic lane is smaller than a predetermined small value, and is set to be linearly increased along with an increase of the absolute value ~~($|\beta|$)~~ ($|\phi|$) of the acute angle formed between the traffic lane and the forward-and-backward axis of the vehicle in an intermediate region between the first and second regions.

15. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 4, wherein the turning state detecting section comprises a vehicular turning curvature calculating section that calculates a vehicular turning curvature (ßv) on the basis of a steering angle (δ) of a vehicular steering wheel and a vehicular velocity (V) of the vehicle, and wherein the deviation tendency detecting section comprises:

a future estimated lateral displacement calculating section that calculates a future estimated lateral displacement (XS) on the basis of curvature (ß) of the traffic lane on which the vehicle is traveling, the vehicular velocity (V) of the vehicle, and the vehicular turning curvature (ßv); and

a first determining section that determines whether the future estimated lateral displacement (XS) is equal to or larger than a deviation determination threshold value (Xc) and wherein the deviation tendency detecting section detects that the vehicle has the state of

the tendency of the vehicular deviation from the traffic lane when the first determining section determines that the future estimated lateral displacement (XS) is equal to or larger than the deviation determination threshold value (Xc).

16. (Currently Amended) A lane keep control apparatus for an automotive vehicle as claimed in claim 6, wherein the deviation tendency detecting section comprises a first traffic lane curvature determining section that determines whether a difference (ß - ßv) between the curvature (ß) of the traffic lane on which the vehicle is traveling and the vehicular turning curvature (ßv) is equal to or larger than a deviation determination threshold value (ßc), ~~and~~ wherein the deviation tendency detecting section determines that the vehicle has the state of the tendency of the deviation from the traffic lane when the difference (ß - ßv) is equal to or larger than the deviation determination threshold value (ßc).

17. (Original) A lane keep control apparatus for an automotive vehicle as claimed in claim 16, wherein the deviation determination threshold value (ßc) is set to provide a relatively small constant value in a first region in which an absolute value $|\beta|$ of the curvature of the traffic lane on which the vehicle is traveling is equal to or larger than a predetermined large value, is set to provide a relatively large constant value in a second region in which the absolute value ($|\beta|$) of the traffic lane curvature (ß) is smaller than a predetermined small value, and is set to be decreased linearly along with an increase in the absolute value ($|\beta|$) of the traffic lane curvature in an intermediate region between the first and second regions.

18. (Original) A lane keep control apparatus for an automotive vehicle as claimed in claim 16, wherein the deviation tendency detecting section further comprises a second traffic lane curvature determining section that determines whether the curvature (ß) of the traffic lane on which the vehicle is traveling is smaller than zero and the difference (ß - ßv) is equal to or smaller than an inverted value (-ßc) of a sign of the deviation determining threshold value (ßc) and wherein the deviation tendency detecting section detects the state of the tendency of the vehicular deviation from the traffic lane when the second traffic lane curvature determining section determines that the curvature (ß) of the traffic lane is smaller than zero and the difference (ß - ßv) is equal to or smaller than the inverted value (-ßc) of the

sign of the deviation determination threshold value (ßc), and wherein the lane keep control apparatus further comprises a target vehicle speed calculating section that calculates a target vehicle speed (Vt) on the basis of the curvature (ß) of the traffic lane, the steering angle (δ) of the vehicle, and deviation determination threshold value (ßc) when the deviation tendency detecting section detects the state of the tendency of the vehicular deviation from the traffic lane and wherein the deceleration controlled variable calculating section calculates the deceleration controlled variable (Pg) on the basis of a proportional coefficient (Kt) and a difference (V -Vt) between the vehicular traveling velocity (V) and the calculated target vehicle velocity (Vt).

19. (Original) A lane keep control apparatus for an automotive vehicle as claimed in claim 18, wherein the proportional coefficient (Kt) to calculate the target vehicle speed is set to provide a relatively small constant value in a first region in which an absolute value ($|\beta|$) of the curvature of the traffic lane is smaller than a predetermined small value, is set to provide a relatively large constant value in a second region in which the absolute value ($|\beta|$) of the curvature of the traffic lane is equal to or larger than a predetermined large value, and is set to be linearly increased along with an increase of the absolute value ($|\beta|$) of the curvature of the traffic lane in an intermediate region between the first and second regions.

20. (Original) A lane keep control apparatus for an automotive vehicle as claimed in claim 18, wherein the proportional coefficient (Kt) to calculate the target vehicle speed (Vt) is set to provide a relatively small constant value in a first region in which a deviation (V - Vt) between the traveling velocity (V) of the vehicle and the target vehicle speed (Vt) is smaller than a predetermined small value, is set to provide a relatively large constant value in a second region in which the deviation (V -Vt) between the traveling velocity (V) of the vehicle and the target vehicle speed (Vt) is equal to or larger than a predetermined large value, and is set to be linearly increased along with an increase of the deviation between the traveling velocity (V) of the vehicle and the target vehicle speed (Vt) in an intermediate region between the first and second regions.

21. (Currently Amended) A lane keep control apparatus for an automotive vehicle, comprising:

deceleration controlled variable calculating means for calculating a deceleration controlled variable on the basis of a state of a tendency of a vehicular deviation from a traffic lane on which the vehicle is traveling; and

braking force controlling means for controlling a braking force acted upon each of **the** driven wheels of the vehicle on the basis of the calculated deceleration controlled variable.

22. (Currently Amended) A lane keep control method for an automotive vehicle, comprising:

calculating a deceleration controlled variable on the basis of a state of a tendency of a vehicular deviation from a traffic lane on which the vehicle is traveling; and

controlling a braking force acted upon each of **the** driven wheels of the vehicle on the basis of the calculated deceleration controlled variable.

23. (New) A lane keep control apparatus for an automotive vehicle as claimed in claim 1, wherein the deceleration controlled variable calculating section calculates the deceleration controlled variable the basis of a first proportional coefficient (Kv1) determined from vehicular specifications, a second proportional coefficient (Ks) determined from a traveling velocity (V) of the vehicle, a third proportional coefficient (Ky) determined from an acute angle formed between the traffic lane and a forward-and-backward axis of the vehicle, an absolute value ($|XS|$) of a future estimated lateral displacement, and a deviation determination threshold value (Xc).

24. (New) A lane keep control apparatus for an automotive vehicle as claimed in claim 1, wherein the deceleration controlled variable calculating section calculates the deceleration controlled variable on the basis of a proportional coefficient (Kt) and a difference (V -Vt) between a vehicular traveling velocity (V) and a calculated target vehicle velocity (Vt).

25. (New) A lane keep control apparatus for an automotive vehicle as claimed in claim 21, wherein the deceleration controlled variable calculating means calculates the deceleration controlled variable on the basis of a first proportional coefficient (Kv1) determined from vehicular specifications, a second proportional coefficient (Ks) determined from a traveling velocity (V) of the vehicle, a third proportional coefficient (Ky) determined from an acute angle formed between the traffic lane and a forward-and-backward axis of the vehicle, an absolute value ($|XS|$) of a future estimated lateral displacement, and a deviation determination threshold value (Xc).

26. (New) A lane keep control apparatus for an automotive vehicle as claimed in claim 21, wherein the deceleration controlled variable calculating means calculates the deceleration controlled variable on the basis of a proportional coefficient (Kt) and a difference (V -Vt) between a vehicular traveling velocity (V) and a calculated target vehicle velocity (Vt).

27. (New) A lane keep control apparatus for an automotive vehicle as claimed in claim 22, wherein calculation of the deceleration controlled variable is performed on the basis of a first proportional coefficient (Kv1) determined from vehicular specifications, a second proportional coefficient (Ks) determined from a traveling velocity (V) of the vehicle, a third proportional coefficient (Ky) determined from an acute angle formed between the traffic lane and a forward-and-backward axis of the vehicle, an absolute value ($|XS|$) of a future estimated lateral displacement, and a deviation determination threshold value (Xc).

28. (New) A lane keep control apparatus for an automotive vehicle as claimed in claim 22, wherein calculation of the deceleration controlled variable is performed on the basis of a proportional coefficient (Kt) and a difference (V -Vt) between a vehicular traveling velocity (V) and a calculated target vehicle velocity (Vt).